

Claims:

1. A method for controlling an engine having a first and second group of cylinders, comprising:

5 operating the engine in a first mode with the first group of cylinders combusting a lean mixture of air and injected fuel at a first ignition timing and the second group of cylinders having substantially no injected fuel; determining a request to operate in a second

10 mode; and

in response to said request, commencing fuel injection in the second group and performing at least one of the actions selected from the group consisting of: retarding said first ignition timing of the first cylinder
15 group, and decreasing airflow through the engine.

2. The method recited in Claim 1 wherein said request is to purge NOx stored in an emission control device coupled to the engine.

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3. The method recited in Claim 1 wherein said request is to purge fuel vapors stored in a fuel vapor storage device.

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4. The method recited in Claim 1 wherein said request is to increase engine output torque.

5. The method recited in Claim 1 wherein said request is to increase manifold vacuum.

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6. The method recited in Claim 1 wherein said request is based on actuation of a brake pedal.

7. The method recited in Claim 1 wherein said request is based on a component operating temperature.

8. The method recited in Claim 1 wherein in response
5 to said request, both retarding said first ignition timing of the first cylinder group and decreasing airflow through the engine are performed.